


Please type a plus sign (+) inside this box → 

PTO/SB/05 (11-00)

Approved for use through 10/31/2002. OMB 0651-0032
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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UTILITY PATENT APPLICATION TRANSMITTAL (Only for new nonprovisional applications under 37 C.F.R. 1.53(b))	Attorney Docket No.	112047-0087
	First Inventor	Alexander T. Garthwaite
	Title	Concurrent Remembered-Set Insertion in a Generation Managed by the Train Algorithm
	Express Mail Label No.	EV336757736US

APPLICATION ELEMENTS See MPEP chapter 600 concerning utility patent application contents.	ADDRESS TO: Mail Stop Patent Application Commissioner for Patents Box 1450 Alexandria, VA 22313-1450
<p>1. <input checked="" type="checkbox"/> Fee Transmittal Form (e.g., PTO/SB/17) (Submit an original and a duplicate for fee processing)</p> <p>2. <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.</p> <p>3. <input checked="" type="checkbox"/> Specification [Total Pages <u>43</u>] (preferred arrangement set forth below) - Descriptive title of the invention - Cross References to Related Applications - Statement Regarding Fed sponsored R & D - Reference to sequence listing, a table, or a computer program listing appendix - Background of the invention - Brief Summary of the invention - Brief Description of the Drawings (if filed) - Detailed Description - Claim(s) - Abstract of the Disclosure</p> <p>4. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C. 113) [Total Sheets <u>28</u>]</p> <p>5. Oath or Declaration [Total Pages <u>2</u>] a. <input checked="" type="checkbox"/> Newly executed (original or copy) b. <input type="checkbox"/> Copy from a prior application (37 CFR 1.63 (d)) (for a continuation/divisional with Box 18 completed) i. <input type="checkbox"/> DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).</p> <p>6. <input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76</p>	<p>7. <input type="checkbox"/> CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)</p> <p>8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary) a. <input type="checkbox"/> Computer Readable Form (CRF) b. Specification Sequence Listing on: i. <input type="checkbox"/> CD-ROM or CD-R (2 copies); or ii. <input type="checkbox"/> paper c. <input type="checkbox"/> Statements verifying identity of above copies</p> <p>ACCOMPANYING APPLICATIONS PARTS</p> <p>9. <input checked="" type="checkbox"/> Assignment Papers (cover sheet & document(s))</p> <p>10. <input type="checkbox"/> 37 C.F.R. §3.73(b) Statement (when there is an assignee) <input checked="" type="checkbox"/> Power of Attorney</p> <p>11. <input type="checkbox"/> English Translation Document (if applicable)</p> <p>12. <input type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 <input type="checkbox"/> Copies of IDS Citations</p> <p>13. <input type="checkbox"/> Preliminary Amendment</p> <p>14. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) (Should be specifically itemized)</p> <p>15. <input type="checkbox"/> Certified Copy of Priority Document(s) (if foreign priority is claimed)</p> <p>16. <input checked="" type="checkbox"/> Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.</p> <p>17. <input type="checkbox"/> Other:</p>

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:



☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP)

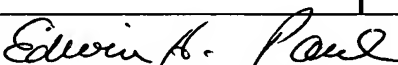
of prior application No: _____ /

Prior application information: Examiner _____

Group / Art Unit:

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS					
<input checked="" type="checkbox"/> Customer Number or Bar Code Label  (Insert C)  or <input type="checkbox"/> Correspondence address below					
Name	Edwin H. Paul				
Address	Cesari and McKenna				
	88 Black Falcon Avenue				
City	Boston	State	MA	Zip Code	02210
Country	U. S. A.	Telephone	(617) 951-2500	Fax	(617) 951-3927

Name (Print/Type)	Edwin H. Paul	Registration No. (Attorney/Agent)	31,405
Signature		Date	October 6, 2003

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

☐ Applicant Claims Small Entity Status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 1,040

Complete if Known

Application Number	Not Yet Assigned
Filing Date	October 6, 2003
First Named Inventor	Alexander T. Garthwaite
Examiner Name	Not Yet Assigned
Group Art Unit	Not Yet Assigned
Attorney Docket No.	112047-0087

METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit Card ☐ Money ☐ Other ☐ None
Order

☒ Deposit Account

Deposit Account Number 03-1237

Deposit Account Name Cesari and McKenna, LLP

The Commissioner is authorized to: (check all that apply)
Charge any deficiency or

☐ Charge fee indicated below ☒ Credit any overpayments
☐ Charge any additional fee(s) during the pendency of this application
☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	750	2001	375	Utility filing fee	770
1002	330	2002	165	Design filing fee	
1003	520	2003	260	Plant filing fee	
1004	750	2004	375	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					770

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

				Extra Claims	Fee from below	Fee Paid		
Total Claims	28	-	20**	=	8	18	=	144
Independent Claims	4	-	3**	=	1	86	=	86
Multiple Dependent							=	0

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1202	18	2202	9	Claims in excess of 20	
1201	84	2201	42	Independent claims in excess of 3	
1203	280	2203	140	Multiple dependent claim, if not paid	
1204	84	2204	42	**Reissue independent claims over original patent	
1205	18	2205	9	**Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2)					230

**or number previously paid, if greater; For Reissues, see below

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English Specification	
1812	2,520	1812	2,520	For filing a request for ex parte reexamination	
1804	920	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	410	2252	205	Extension for reply within second month	
1253	930	2253	465	Extension for reply within third month	
1254	1,450	2254	725	Extension for reply within fourth month	
1255	1,970	2255	985	Extension for reply within fifth month	
1401	320	2401	160	Notice of Appeal	
1402	320	2402	160	Filing a brief in support of an appeal	
1403	280	2403	140	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,300	2453	650	Petition to revive - unintentional	
1501	1,300	2501	650	Utility Issue fee (or reissue)	
1502	470	2502	235	Design Issue fee	
1503	630	2503	315	Plant Issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	40
1809	750	2809	375	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	750	2810	375	For each additional invention to be examined (37 CFR 1.129(b))	
1801	750	2801	375	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	
Other fee (specify)					
Other fee (specify)					
*Reduced by Basic Filing Fee Paid					
SUBTOTAL (3)					40

SUBMITTED BY

Name (Print/Type) Edwin H. Paul

Registration No. 31,405

Complete (if applicable)

Telephone (617) 951-2500

Signature Edwin H. Paul

(Attorney/Agent)

Date October 6, 2003

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038. This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OF COMPLETED FORMS TO THIS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re The Application of:)	
Alexander T. Garthwaite)	
)	
Serial No.: Not Yet Assigned)	Examiner: Not Yet Assigned
)	
Filed: October 6, 2003)	
)	Art Unit: Not Yet Assigned
For: Concurrent Remembered-Set Inser-)	
tion in a Generation Managed by the)	
Train Algorithm)	
)	
		Cesari and McKenna, LLP
		88 Black Falcon Avenue
		Boston, MA 02210
		October 6, 2003

EXPRESS-MAIL DEPOSIT

“Express Mail” Mailing-Label Number: EV336757736US

The following papers are being deposited with the United States Postal Service
“Express Mail Post Office to Addressee” service pursuant to 37 C.F.R. §1.10:

<u>X</u> Patent Application (43 pages including 28 claims)	
<u>X</u> Power of Attorney	<u>X</u> Oath or Declaration
<u>X</u> Fee Transmittal Letter	<u>X</u> Utility Patent Application Transmittal Letter
<u>X</u> Assignment With Recordation Form Cover Sheet	<u>X</u> Informal Drawing (28 sheets)
<u>X</u> Check No. 27316 for \$1,040.00	<u>X</u> Letter to Official Draftsman
<u>X</u> Return Receipt Postcard	<u>X</u> Nonpublication Request

REQUEST AND CERTIFICATION UNDER 35 U.S.C. 122(b)(2)(B)(i)	First Named Inventor		Alexander T. Garthwaite
	Title	Concurrent Remembered-Set Insertion in a Generation Managed by the Train Algorithm	
	Atty Docket Number	112047-0087	

I hereby certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing. I hereby request that the attached application not be published under 35 U.S.C. 122(b).

October 6, 2003

Date

Edwin H. Paul

Signature

Edwin H. Paul, Reg. No 31,405

Typed or printed name

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing**.

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant **must** notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

Burden Hour Statement: This collection of information is required by 37 CFR 1.213(a). The information is used by the public to request that an application not be published under 35 U.S.C. 122(b) (and the PTO to process that request). Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This form is estimated to take 6 minutes to complete. This time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.